CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 :2005

T-2377

Job No.: CTCE/BBMP/W.No.14/RN/CSR-01/242c/CEMENT/2016-17 Date: 12.01.2017

TEST REPORT ON CEMENT

* Customer	:	**Asst. Executive Engineer**, T. Dasarahalli Sub Division, BBMP, Bangalore.
* Agency	:	**Mr. R. Nithin,** #66, Nisargadama, 3rd Main Road, 2nd Cross, Hemavathi Nagara, Hasan – 573201.
* Name of Work	:	Improvements to Roads & Drains at Muneshwara Nagara and Ashoka Nagara Ward No.14, Bagalagunte, BBMP, Bangalore.
* Reference	:	BBMP/DZ/AEE/TDSD/PR/600/1/2016-17 Dated: 10.01.2017
* Sample ID	:	Cement - Sample 1
Sample Received on	:	10.01.2017
Period of Testing	:	10.01.2017 to 12.01.2017

The results of the tests conducted on the cement sample are as follows:

Sl. No	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 8112-2013
1	Standard Consistency	IS-4031 (Part -4) 1988 (RA-2014)	29.00 %	-
2	a) Initial Setting Time	IS-4031 (Part -5) 1988 (RA-2014)	160 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part -5) 1988 (RA-2014)	475 Minutes	Not More than 600 Minutes
3	Soundness by Le Chartlier Method	IS-4031 (Part-3) 1988 (RA-2014)	1 mm	Not more than 10mm

*Information is furnished by the Customer/Representative.

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VIDYARANI P.K.
Technical Manager

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Job No.: CTCE/BBMP/W.No.14/RN/CSR-01/242c/SAND-Gradation/2016-17 12.01.2017

TEST REPORT ON SIEVE ANALYSIS OF FINE AGGREGATES

* Customer	: **Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
* Agency	: **Mr. R. Nithin,** #66, Nisargadama, 3rd Main Road, 2nd Cross, Hemavathi Nagara, Hasan – 573201.
* Name of Work	: Improvements to Roads & Drains at Muneshwara Nagara and Ashoka Nagara Ward No.14, Bagalagunte, BBMP, Bangalore.
* Reference	: BBMP/DZ/AEE/TDSD/PR/600/1/2016-17 Dated: 10.01.2017
* Sample ID	: Fine Aggregates - Sample 1
Technical Reference	: IS : 2386 (Part 1) - 1963 (RA-2011)
Sample Received On	: 10.01.2017
Date of Testing	: 12.01.2017

Total Wt. of Aggregates in gms = **1000**

IS Sieve Size in mm	Cumulative Weight Passing in %	Specific Limits as per IS 383-1970 (RA- 2011)			
		Zone-I	Zone-II	Zone-III	Zone-IV
10	100	100	100	100	100
4.75	96.40	90-100	90-100	90-100	95-100
2.36	77.90	60-95	75-100	85-100	95-100
1.18	57.90	30-70	55-90	75-100	90-100
600 Micron	27.90	15-34	35-59	60-79	80-100
300 Micron	16.90	5-20	8-30	12-40	15-50
150 Micron	7.00	0-10	0-10	0-10	0-15

* Information is furnished by the Customer/Representative

Remarks : This sample is under Zone-I specific limits.

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Job No.: CTCE/BBMP/W.No.14/RN/CSR-01/242c/AGG/GR/2016-17 12.01.2017

TEST REPORT ON SIEVE ANALYSIS OF COARSE AGGREGATES

* Customer	:	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
* Agency	:	**Mr. R. Nithin,** #66, Nisargadama, 3rd Main Road, 2nd Cross, Hemavathi Nagara, Hasan – 573201.
* Name of Work	:	Improvements to Roads & Drains at Muneshwara Nagara and Ashoka Nagara Ward No.14, Bagalagunte, BBMP, Bangalore.
* Reference	:	BBMP/DZ/AEE/TDSD/PR/600/1/2016-17 Dated: 10.01.2017
* Sample ID	:	Coarse Aggregates (40mm) - Sample 1
Technical Reference	:	IS : 2386 (Part 1) -1963 (RA-2011)
Sample Received on	:	10.01.2017
Date of Testing	:	12.01.2017

Total Wt. of Aggregates in gms= **5000**

IS Sieve Size in mm	Cumulative Weight Passing in %	Specific Limits as per IS 383-1970 (RA- 2011)	
		Graded	Single Sized
80	100	100	-
63	100	-	100
40	96.70	95-100	85-100
20	35.06	30-70	0-20
10	14.60	10-35	0-5
4.75	2.76	0-5	-

* Information is furnished by the Customer/Representative

Remarks : This sample is under graded specific limits.

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Job No.: CTCE/BBMP/W.No.14/RN/CSR-01/242c/CC Solid Block/2016-17 16.01.2017

TEST REPORT ON COMPRESSIVE STRENGTH OF SOLID CONCRETE BLOCKS

* Customer	:	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
* Agency	:	**Mr. R. Nithin,** #66, Nisargadama, 3rd Main Road, 2nd Cross, Hemavathi Nagara, Hasan – 573201.
* Name of Work	:	Improvements to Roads & Drains at Muneshwara Nagara and Ashoka Nagara Ward No.14, Bagalagunte, BBMP, Bangalore.
* Reference	:	BBMP/DZ/AEE/TDSD/PR/600/1/2016-17 Dated: 10.01.2017
Technical Reference	:	IS: 2185 (Part-1) - 2005 (RA-2010)
Size of Blocks	:	400mm x 200mm x 200mm
Cross Sectional Area	:	80000 mm^2
No. of Blocks Tested	:	08
Sample Received on	:	12.01.2017
Date of Testing	:	16.01.2017

Sl.No.	Block ID	Wt. in Kg	Failure load (KN)	Compressive strength (N/mm^2)	Requirement as per IS: 2185 (Part-1) - 2005 (RA-2010)
1	Block 1	36.35	258.6	3.23	Minimum required Compressive Strength of Individual Units 3.20 N/mm^2
2	Block 2	35.18	260.3	3.25	
3	Block 3	34.92	262.4	3.28	
4	Block 4	35.26	263.5	3.29	
5	Block 5	36.35	260.8	3.26	
6	Block 6	34.19	261.2	3.27	
7	Block 7	35.26	260.3	3.25	
8	Block 8	35.85	262.5	3.28	

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Job No.: CTCE/BBMP/W.No.14/RN/CSR-01/242c/Cube/2016-17 24.02.2017

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

* Customer	:	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
* Agency	:	**Mr. R. Nithin,** #66, Nisargadama, 3rd Main Road, 2nd Cross, Hemavathi Nagara, Hasan – 573201
* Name of the work	:	Improvements to Roads & Drains at Muneshwara Nagara and Ashoka Nagara Ward No.14, Bagalagunte, BBMP, Bangalore.
* Reference	:	BBMP/DZ/AEE/TDSD/PR/600/1/2016-17 Dated: 10.01.2017
* Sample ID	:	Cement Concrete
Technical Reference	:	IS: 516-1959 (RA-2013)
Size of cubes	:	150mmx150mmx150mm
Cross Sectional Area	:	22500 mm^2
* Grade of Concrete	:	M_{10}
Compressive Strength as on	:	28^{th} day
Sample Received on	:	24.02.2017

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	27.01.2017	24.02.2017	8.138	252.3	11.21
2	27.01.2017	24.02.2017	8.295	263.5	11.71
3	27.01.2017	24.02.2017	8.365	285.4	12.68

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Job No.: CTCE/BBMP/W.No.14/RN/CSR-01/242c/Cube/2016-17

28.02.2017

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

* Customer	:	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
* Agency	:	**Mr. R. Nithin,** #66, Nisargadama, 3rd Main Road, 2nd Cross, Hemavathi Nagara, Hasan – 573201
* Name of the work	:	Improvements to Roads & Drains at Muneshwara Nagara and Ashoka Nagara Ward No.14, Bagalagunte, BBMP, Bangalore.
* Reference	:	BBMP/DZ/AEE/TDSD/PR/600/1/2016-17 Dated: 10.01.2017
* Sample ID	:	Cement Concrete
Technical Reference	:	IS: 516-1959 (RA-2013)
Size of cubes	:	150mmx150mmx150mm
Cross Sectional Area	:	22500 mm^2
* Grade of Concrete	:	M_{15}
Compressive Strength as on	:	28^{th} day
Sample Received on	:	28.02.2017

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	31.01.2017	28.02.2017	8.149	368.5	16.38
2	31.01.2017	28.02.2017	8.285	382.5	17.00
3	31.01.2017	28.02.2017	8.335	392.5	17.44

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Job No.: CTCE/BBMP/W.No.14/RN/CSR-01/242c/Cube/2016-17 28.02.2017

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

* Customer	:	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
* Agency	:	**Mr. R. Nithin,** #66, Nisargadama, 3rd Main Road, 2nd Cross, Hemavathi Nagara, Hasan – 573201
* Name of the work	:	Improvements to Roads & Drains at Muneshwara Nagara and Ashoka Nagara Ward No.14, Bagalagunte, BBMP, Bangalore.
* Reference	:	BBMP/DZ/AEE/TDSD/PR/600/1/2016-17 Dated: 10.01.2017
* Sample ID	:	Cement Concrete
Technical Reference	:	IS: 516-1959 (RA-2013)
Size of cubes	:	150mmx150mmx150mm
Cross Sectional Area	:	22500 mm^2
* Grade of Concrete	:	M_{15}
Compressive Strength as on	:	28^{th} day
Sample Received on	:	28.02.2017

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	31.01.2017	28.02.2017	8.180	365.3	16.24
2	31.01.2017	28.02.2017	8.229	379.5	16.87
3	31.01.2017	28.02.2017	8.370	385.7	17.14

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Job No.: CTCE/BBMP/W.No.14/RN/CSR-01/242c/Kerb Stone/2016-17 09.02.2017

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CORE

* Customer	:	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
* Agency	:	**Mr. R. Nithin,** #66, Nisargadama, 3rd Main Road, 2nd Cross, Hemavathi Nagara, Hasan – 573201.
* Name of work	:	Improvements to Roads & Drains at Muneshwara Nagara and Ashoka Nagara Ward No.14, Bagalagunte, BBMP, Bangalore.
* Reference	:	BBMP/DZ/AEE/TDSD/PR/600/1/2016-17 Dated: 10.01.2017
* Sample ID	:	Precast slab
* Grade of Concrete	:	M_{20}
Techinical Reference	:	IS:516-1959 (RA- 2013), SP-24:1983.
Sample Received on	:	04.02.2017
Date of Testing	:	09.02.2017

Sl. No	Dia of Core D (mm)	Height of Core H (mm)	Core Wt (Kg)	Density of Core (kg / m^3)	H / D	Correction factor (Based on H/D)	Failure Load (kN)	Core Strength (N/mm^2)	Correction Factor for the Dia. (Strength of the Core x 1.08)	Corrected Cylinder Compressive Strength (N/mm^2)	Equivalent Cube Compressive Strength (N/mm^2)
1	50.00	79.00	0.390	2514.25	1.58	0.955	30.25	15.41	16.64	17.43	21.79
2	50.00	80.00	0.399	2540.11	1.60	0.957	32.25	16.42	17.74	16.97	21.22
3	50.00	81.00	0.402	2527.62	1.62	0.959	33.95	17.29	18.67	17.91	22.38

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